Estimating the Cost of Providing Home-based Care for HIV/AIDS in Rwanda

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- *Delivery of quality services by health workers.*
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Abstract

Home-based care (HBC) for HIV/AIDS is increasingly looked to as a more accessible and affordable alternative to more costly inpatient care, both for patients who are unable to travel to or pay for inpatient care as well as for governments that must fund inpatient facilities. Partners for Health Reform*plus* estimated the cost of HBC for HIV in Rwanda, based on a sample of eight programs offering care in early 2004. The sample comprised facility- and community-based programs. Both types of program implement the medical care recommended in the Ministry of Health guidelines for HBC. Facility-based care focuses on health care, utilizing a combination of health professionals and volunteers, delivering higher levels of care and offering referrals to facilities with which they are associated. Community-based care offers a more holistic approach including psycho-social support, not only to people living with HIV/AIDS but to entire households. The study found that facility-based care has higher estimated costs per client than community-based care, with monthly costs per client ranging from approximately $ 31.20 to $36.01 per month, the cost of community-based care ranged from $ 12.75 to $ 24.53 per month. Up to 50 percent of program costs are attributed to food assistance – highlighting the poverty faced by many households. Staff and per diem costs account for 12-37 percent of total costs. Drugs and medical supplies costs account for small percentage of total costs, averaging only 2 percent of total costs. Both types of program rely on volunteer assistance, and staff attrition is a concern.

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Acronyms

ANSP+	*Association Nationale des Séro-Positifs*
ARVs	Antiretroviral
CHK	*Centre Hospitalier de Kigali*
CMS-Biryogo	*Centre Médical Social of Biryogo*
CNLS	*Commission Nationale de Lutte contre le SIDA* (National Committee for the Fight against AIDS)
DOTS	Directly Observed Short-Term Therapy
ESTHER	*Ensemble Solidarité Thérapeutique Hospitalière en Réseau*
HBC	Home-Based Care
MAP	Multi-Sectoral AIDS Program (World Bank)
MiniSanté	Ministry of Health
MSF-B	*Médecins Sans Frontières-Belgique*
N/A	Nonapplicable
NHA	National Health Accounts
NGO	Nongovernmental Organization
OI	Opportunistic Infection
PHR*plus*	Partners for Health Reform*plus*
PLWHA	People Living with HIV/AIDS
TRAC	Treatment and Research AIDS Center
ULYs	Useful Life Years
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WFP	World Food Program
WJCF	William J. Clinton Foundation

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Executive Summary

A growing trend in the delivery of HIV care in developing countries is formalizing home-based care (HBC) services to provide care, usually palliative care, for people living with HIV/AIDS (PLWHA). HBC is a promising solution for some of the challenges to providing care to those individuals, especially those too sick or too far to access hospital care. Because HBC, by definition, is based in patients' homes, it is looked upon as a more affordable and attainable alternative than is facility-based care. Therefore, many African countries are working to develop policies to expand such care. However, the current definitions and components of HBC are diverse and basic information is needed to clarify the HBC package, including logistics and costs, before expansion takes place. However, to date, there are few documented estimates of the cost of HBC for HIV. This study hopes to contribute to the literature and thereby help the policy process by looking at HBC costs in Rwanda.

In 2002, there were approximately 495,000 HIV-infected individuals in Rwanda, a country of eight million people. Until now, the majority of AIDS treatment and care has been delivered in inpatient hospital settings. Indeed, AIDS patients are filling Rwanda's hospitals: a recent analysis reported that they occupy 60 percent of all hospital beds (William J. Clinton Foundation 2003). The portion of the Ministry of Health (MiniSanté) budget used to pay for costly hospital care is consuming resources that would otherwise go to more appropriate outpatient management of AIDS and related diseases. In response, a number of organizations in Rwanda began to offer HBC services in 2001 on a small scale and, in 2002, the MiniSanté produced guidelines for home-based care.

As HBC programs in Rwanda grow, the government and development partners require additional information on the cost and scale of HBC to inform program scale-up. This study is intended to respond to that need. It classifies HBC in Rwanda by two types of providers, facility-based and community-based, and looks at the services offered by and costs of a sample of eight HBC programs. Both types of providers implement the medical care recommended by the MiniSanté HBC guidelines, but they differ slightly in terms of the human resources combination that they use and the focus of their services. Facility-based care focuses on higher levels of medical care, utilizes a combination of health professionals and volunteers to deliver care, and offers direct referrals to facilities with which they are associated. Community-based care, which is provided by trained community volunteers attached to a non-medical, nongovernmental organization (NGO), offers a more "holistic approach" that includes an emphasis on a continuum of psycho-social assistance to both PLWHAs and households with PLWHAs. Community-based HBC refers to health facilities but without the same direct relationship of facility-based programs.

Key findings include the following: Facility-based care has higher costs per client than community-based care, with monthly costs ranging from $ 31.20 to $ 36.01 per client per month. Community-based program costs range between $ 12.75 and $24.53 per client per month. The cost of one client visit made by HBC staff and/or volunteers ranges from $ 1.59 to $ 4.51. Drugs and medical supplies account for a small percentage of total costs, averaging only 2 percent.

HBC encompass a diverse mix of services where programs include food assistance, psycho-social support, human rights interventions, and health care. Up to 50 percent of program costs are attributed to food assistance – highlighting the poverty faced by many households coping with HIV.

Because facility-based and community-based programs both rely on volunteer assistance, staff attrition is a concern.

Findings imply the following recommendations:

- Continue the policy dialogue and stakeholder engagement to include HBC programs in the delivery of HIV/AIDS care and treatment, including ARVs;
- Improve data and institutionalizing processes to gather information on HBC services and impact;
- Improve data on HBC by costing programs after one year of program implementation.

Key findings from this report will provide the Ministry of Health, donors, policymakers, providers, and other stakeholders valuable information for scaling-up HBC services.

1. Introduction and Purpose

Rwanda, the most densely populated country in Africa, is also one of the least-developed countries in the world, ranking 152 out of 162 in the United Nations Development Program's Human Development Index (William J. Clinton Foundation [WJCF] 2003). The per capita income ($252) is also among the lowest in the world and the GDP is $7.2 billion (WJCF 2003). About 66 percent of rural and 12 percent of Kigali urban residents are considered destitute (Partners for Health Reform*plus* [PHR*plus*] 2004). Half of Rwanda's population of 8.1 million is under age 20. Ninety percent of Rwandans are involved in subsistence agriculture; this has led to a severe state of soil exhaustion, which, in conjunction with poverty and the high population density, leaves the country with an undernourishment rate of approximately 40 percent (WJCF 2003).

Delivering health care in a country with such needs requires a well-structured health system. The current Rwandan health system is three-tiered, connected by referrals across 365 health centers, 33 district hospitals, and five reference hospitals (WJCF 2003). Health centers provide basic care, including antenatal, preventive, some curative care, and a limited number of laboratory tests. Those in need of more advanced care are referred to a district hospital, and the critically ill are referred to reference hospitals where they can receive more extensive care. A small private health system is accessible to those who can afford private health care.

Continuity of health care in Rwanda is an issue, as many patients are unable to reach the hospitals due to lack of transportation and hilly, rugged terrain that are difficult to traverse especially when patients are malnourished and/or critically ill.

To support public sector efforts to deliver health care, nongovernmental, bilateral, and multilateral organizations contribute technical and financial support. Seventy percent of total health care spending in Rwanda is financed by these organizations (WJCF 2003). Co-financing is also a common practice in the health system. For example, approximately 38 percent of Rwandan health facilities are co-funded by the government and church sources like CARITAS, which oversees health care programs and training schools supported by the Catholic Church (WJCF 2003).

HIV/AIDS is placing a great deal of pressure on the health system in Rwanda. In 1999, UNAIDS estimated that HIV prevalence in adults was 11.2 percent.[1] More recent 2002 estimates from the government of Rwanda put adult prevalence at 12 percent (Ministry of Health 2002). With 495,000 HIV-infected individuals in 2002, prevalence rates are expected to increase to 691,356 by 2007 (WJCF 2003), with spread primarily through heterosexual contact and mother-to-child transmission. As in many countries, the HIV prevalence in Rwanda differs in rural and urban areas: infection rates in urban areas are considerably higher than in rural areas, although these rural-urban differences may be decreasing (WJCF 2003). Life expectancy is predicted to fall from 51 to 39 years due to HIV (PHR*plus* 2004). HIV and tuberculosis co-infection rates are 60 percent.

[1] www.unaids.org, accessed January 2004.

Health expenditures for HIV-related issues are on the rise as the health system, communities, households, and people living with HIV/AIDS (PLWHA), try to cope. National Health Accounts in 1998 revealed that 10 percent of total per capita health expenditures were dedicated to HIV/AIDS prevention and treatment. Approximately 93 percent of these expenditures on HIV were out-of-pocket expenditures while 6 percent were from donor resources, and only 1 percent from government funds (Schneider et al. 2000). The majority of AIDS treatment and care has been delivered in inpatient hospital settings. AIDS patients are filling Rwanda's hospitals: a World Bank report stated that 60 percent of hospital beds are occupied by AIDS patients (WJCF 2003). The portion of the Ministry of Health (MiniSanté) budget used to pay for costly hospital care is consuming resources that could be more appropriately used for outpatient management of AIDS and related diseases. To date, HIV care has been delivered primarily through the public health system and health providers in nongovernmental organizations (NGOs). Antiretroviral (ARV) drugs are dispensed in a limited number of public health facilities.

Given the challenge of delivering accessible and affordable HIV care, a growing number of developing countries are considering home-based care (HBC) as an alternative to facility care. HBC traditionally is considered as a means to deliver palliative care[2] for the terminally ill. The definitions and components of HBC are diverse and therefore many African countries are working to develop policies to formalize HBC. To expand home-based care, basic information is needed to clarify the HBC package, including logistics and costs.

There are few documented estimates of the cost of HBC for HIV. Those studies that exist (carried out with different methodologies and contexts) show that HBC costs vary by location (rural and urban), service package, and program expansion and maturity. For example, in Cambodia the average cost of providing HBC services was $ 9.28 per home visit in urban areas and $ 14.00 per visit in rural areas (International HIV/AIDS Alliance 1999). In Zimbabwe, costs were US $16 and US $23 for HBC in two urban programs and US $38 and $42 in two rural programs. Scale and program maturity also impacts costs of HBC: In Zimbabwe, the cost per home care visit decreased from US$ 20 to US$ 1 as the program expanded (Lee 1999) because, although costs increased by 31 percent, the number of clients and visits also increased and the program became more efficient. Country-specific program standards, such as number of home visits, also has an impact on cost. In Zambia, each HIV/AIDS patient received one visit per month. In South Africa, the number of HBC visits varied by site based on the integrated package of care provided (Uly and Hensher 1992). In South Africa, providing palliative care to PWLHA in their last year of life using an integrated model of home care cost $ 3.92 per visit per patient.

A number of organizations in Rwanda began to offer home-based care services in 2001 on a small scale, and the MiniSanté developed HBC guidelines in 2002. To expand HBC, basic information is needed to clarify the HBC package, including logistics and costs. This report presents the results of a study of the costs of home-based care HIV/AIDS services in Rwanda through a sample of eight HBC programs, the scope of their services, and estimates of costs of providing services per patient.

[2] Palliative care is considered as clinic-based and home/community-based activities aimed at optimizing the quality of life of HIV-infected clients and their families throughout the continuum of illness by means of symptom diagnosis and relief; psychological and spiritual support; clinical monitoring and management of opportunistic infections (OIs) and other HIV/AIDS related complications; end-of-life care; social and material support, such as nutritional, legal and housing support; and training and support for caregivers (President's Emergency Plan for AIDS Relief 2004).

2. Home-based Care in Rwanda

Delivering care at home has been as means to support people living with AIDS in Rwanda since the beginning of the epidemic. The formal concept of home-based care in Rwanda began with a small set of programs in 2001. In 2003, a more structured set of HBC programs were launched, and within six months, HBC in Rwanda expanded tremendously. Although the current set of HBC programs is relatively new and small in scale, an unofficial estimate suggests that there are up to 30 HBC programs. Current HBC programs are primarily financed by international donors, including the U.S. Agency for International Development (USAID), and are established by nongovernmental organizations, such as *Médecins Sans Frontieres*, World Vision, Africare, Family Health International (FHI), and CARE International. Food security and nutritional support tend to be central in responding to the needs of households coping with HIV. In response, USAID through the Food for Peace Program and Emergency Food Program and the U.N. World Food Program (WFP) donate supplemental food rations for HIV/AIDS individuals and their families.

Given the increase in HBC programs in Rwanda, the government of Rwanda has developed guidelines for home-based care. Guidelines tend to focus on technical concepts of HIV infection and steps for health professionals in assisting people living with HIV/AIDS including pediatric HIV/AIDS and palliative care. While current guidelines do not extend to discussions of antiretroviral therapy at home and issues of drug resistance, a few programs have extended to include counseling to discuss ARV treatment adherence to ensure ARV regimen compliance and avoid drug resistance.

HBC has a variety of typologies, each representing a different delivery scheme, mix of services, staff, and reach. For this study in Rwanda, we have categorized HBC in two types: as facility-based and community-based. The service package is fairly similar in each type. Facility-based HBC programs are anchored by health care facilities and often utilize health center staff to deliver services with volunteers. Community-based programs deliver HBC primarily through volunteer networks in the community together with NGO program staff, not specifically health professionals. Both facility-based and community-based programs often use PWLHA as volunteers.

The emphasis of each type of program tends to differ. Facility-based programs often focus on medical aspects of care involving teams including health professionals who can provide higher levels of care. In addition, facility-based programs tend to provide referrals more readily as they are connected with health facilities. Community-based programs emphasize psycho-social support to PLWHAs and their families; link prevention and care through community education on HIV/AIDS prevention – emphasizing the importance of reducing stigma; and intensively work on human rights and protection of PLWHAs. One key feature of community-based programs is their focus on assisting HIV-affected households in protecting their property; income-generating activities; and assistance with school fees for PLWHAs and their children, a feature that facility-based programs cannot do easily.

HBC is facilitated through team visits to HIV/AIDS patients in their homes; services are provided free-of-charge. Specific services include treatment of opportunistic infections (OIs); provision of some drugs including antibiotics; delivery of palliative care; hygiene counseling; home

cleaning services; counseling and psychological help; and supplemental food rations for the patient and the rest of the PLWHA household.

Current HBC programs do not provide ARV therapy and HIV policies do not discuss the use of HBC as a mode of ARV delivery. HBC program managers and health professionals are beginning to explore the opportunity to extend ARV treatment through HBC programs. Given Rwanda's experience with implementing DOTS (Directly Observed Short-term Therapy) for the treatment of tuberculosis, some health professionals are interested in discussing whether a DOTS strategy for ARV delivery would be beneficial in Rwanda. ARVs are being delivered in pilot programs with community workers in Uganda, and community delivery of ARVs is currently advocated by public health specialists.

To date there are no cost estimates on delivering care through HBC in Rwanda. In addition, given the newness of HBC in Rwanda, there have been limited assessments of HBC program effectiveness. Outputs tend to include number of HBC visits and HBC clients. Standard number of visits per patient is also estimated by HBC programs and standards vary across countries. Based on the available information, the following analysis will apply costing methods to better determine the cost of HBC per HBC visit and HBC client. Given the interest in HBC there is a need for greater information on the typology of HBC, the reach and cost of HBC by typology, and the potential for HBC to add additional health services.

3. Methodology

Eight home-based care programs were conveniently sampled to collect programmatic and financial data.[3] Study parameters for analysis were informed by the literature and include estimated total monthly recurrent and capital costs per program, estimated monthly costs per patient served, and estimated costs per HBC visit.

While benefits of programs in many cases may extend beyond the patient to the entire household,[4] the unit of analysis remained focused on the patient and all benefits and costs were applied to the patient. Donated labor of the volunteers who are already providing their time free of charge in the Rwanda health system was not valued, while donated commodities – medical products, sanitation products, and food – were valued.

3.1 Data Collection Process

Data was collected from eight HBC programs in January and February 2004. The study used various methods to gather data – structured interviews, document reviews, and estimation methodologies. Interviews using a structured questionnaire were held with program and financial managers of the HBC activities. Given the complexity of many HBC programs, and their integration in larger health programs, it was necessary to apply cost estimation methodologies. Therefore, percent of level of effort expended on HBC determined the percent multiplier for shared costs. Results were validated by HBC program managers to ensure data accuracy.

3.2 Costing Principles

Data on costs were collected from financial records that provided monthly expenditures. When information was presented annually, annual costs were converted into monthly amounts. However, due to the start up phase of many of the HBC programs in Rwanda, the majority of the costs were estimated and were not yet represented in financial records. Standard costing guidelines such as the one described in "*Cost Analysis: Module 8, User's Guide"* (Primary Health Care Management Advancement Programme 1992) were used. In principle, the estimation methodology uses the following basis:

The following outlines estimation methods used in this analysis.[5]

Cost of item = quantity of the item *times* its unit price

[3] Given the absence of a complete inventory of HBC programs in Rwanda, the study team did not use a representative sampling methodology.
[4] Food donations, counselling on HIV care, advocacy, human rights assistance, and prevention are examples of program services that benefit the household in addition to the HIV/AIDS patient.
[5] Based on standard costing guidelines, such as the one described in "*Cost Analysis, Module 8, User's Guide"* (Primary Health Care Management Advancement Programme 1992).

In programs where HBC is only one of the many benefits delivered, the costs were allocated based on the percentage use for the HBC component.

Cost of item = quantity of the item *times* unit price of the item *times* percentage of use of the item in HBC

The estimated total monthly costs per patient are calculated by dividing the total HBC program costs by the total number of patients served.

Estimated total monthly costs per patient = total HBC Program costs *divided* by the total # of HIV/AIDS patients served

Additionally, the cost per visit per HBC visit is calculated by dividing the total monthly costs of the program by the total number of home visits for each program.[6]

Cost per visit = total monthly costs of HBC program *divided by* the total estimated # of HBC visits

3.3 Cost Categories

The costs include all local resources used over a month in the provision of HBC services including HBC visits such as salaries, short-term training, per diem paid to volunteers, transport costs (for program staff for supervision purposes), drugs, hygiene products, food rations, utilities, and maintenance. Capital costs (defined here for items with a lifespan of over one year) were also calculated.

3.3.1 Recurrent Costs

Salaries. The study collected the number and types of staff involved in the home-based care program and their base salary. In the cases where staff was not working 100 percent of time on HBC activities, the interviewers collected the percentage of time spent in HBC activities and applied to the salaries. In many instances it was necessary to apply a fringe benefits percentage; 40 percent was applied to the base salary.

Short-term training. The study calculated the costs of meetings and per diem of program staff and/or volunteers for short-term refresher training and updates. In some cases, the program had already a "per person" cost for short-term training: this was multiplied by the number of persons trained. However, for most organizations, program managers provided estimates of the short-term training costs. Cost of initial training are discussed in the capital costs (see below).

Per diem. All programs pay for the per diem of health workers and volunteers: this includes transport, lodging, and meal costs for program staff and incentive payments for volunteers who visit HIV/AIDS patients. All programs were able to provide data about the per diem costs.

[6] The standard is that each HBC patient receives an average of eight visits per month (twice a week) by health care workers or/and volunteers.

Transport. The costs of operating and maintaining vehicles were obtained directly from programs. In cases where the program had activities other than HBC, the program provided an appropriate percentage of time dedicated to HBC. Included in this category are the costs of using drivers, with their salaries calculated as explained earlier in this document.

Drugs and medical supplies. The study used estimates of the costs of drugs used by HBC program managers. Data on consumption of drugs was difficult to obtain because the programs were new. HBC workers and/or volunteers carry kits to PLWHAs. These kits contain drugs, basic medical supplies (thermometer, gloves, etc.), and personal hygiene products. However, the HBC drugs list varies between programs. Some providers offer a wider range of drugs than others.

Providers were able to provide monthly estimates of total drugs consumption but overall could not provide the proportion between the different types of drugs (see below). Two providers estimated the proportion of drugs and personal hygiene products as two-thirds and one-third of the total kits usage: the same proportion is used for the other providers in this study.

The drugs provided by the programs are for the treatment of OIs, antibiotics and palliative care. OIs reflect the drugs used for the treatment of common symptoms associated with HIV/AIDS such as tuberculosis, oral thrush, and pneumonia/septicemia: cotrimoxazole, nystatine, ketoconazole, and sulfadoxine pyrimethanine. The types of antibiotics provided in the HBC kits are amoxycillin, tetracycline, and erythromycin. Palliative drugs are for the relief of the most common symptoms associated with HIV/AIDS such as fever, cough, diarrhea, skin rashes, headaches, and nausea. They generally include aspirin, paracetamol, ointments, disinfectant, rubbing alcohol, and benzyl benzoate. Also in this category are basic hygiene products such as talcum powder, soap, gloves, condoms etc.

Food rations. Rwanda is among 25 nations with the highest rate of undernourishment (WJCF 2003). Those most susceptible to such undernourishment are children (especially infants and orphans), pregnant women, and PLWHAs. NGOs such as the World Food Program, World Vision, and World Relief assist the government by contributing to food security and dispensing food rations.

- Food rations currently donated by USAID and by the World Food Program (WFP) were included in the costs. The two programs work very similarly by providing approximately the same food rations to PLWHAs and their families. The monthly family rations are the following:
  - Vegetable oil, as a high energy source: **3.3** kilograms
  - Corn soy blend (CSB), a millet cereal fortified with micronutrients: **5.5** kilograms
  - Lentils, as a high source of proteins: **13.2** kilograms
  - Wheat flour: **44** kilograms

These rations provide supplemental nutrition to a family of up to five members with at least one member as an HIV/AIDS patient by the WFP and USAID.

To account for all resources required by HBC programs, the study included in its calculation the imputed cost of food donated to clients. WFP estimates that the distributed cost of the food ration (including insurance, freight, and transport to associations and NGOs) is $ 31.50 per family/household monthly. To ensure data comparability, the study used the WFP figures. The total monthly costs of donated food rations were arrived at multiplying this per household figure with the number of PLWHAs served by the HBC program.

Utilities. The overhead costs of running programs such as electricity, water, maintenance, and repairs were obtained through discussions with program managers and their finances staff. For programs in which utilities costs was difficult to obtain or estimate, a percentage of 25 percent of the rent costs/building depreciation costs (see below) was used to determine utilities costs.

3.3.2 Capital Costs

Capital costs were also collected and estimated. Details were taken on the office space (either rent, estimates of what would be paid for rent in case of free occupancy, and building/land depreciation), furniture, computers, equipment, and vehicles. ULYs (Useful Life Years) were calculated by annualizing the capital costs over 20, 10 and five years for buildings, furniture, and equipment (including computer and related hardware) respectively. Vehicles ULYs were calculated at 15 years. These items were estimated by asking program managers to provide purchasing costs estimates or thru the examination of vendor invoices.

For the purpose of the study, initial training (long-term training) of medical staff, program managers and volunteers were considered capital costs. Except for one instance where the data were readily available, term training costs were estimated together with program management. Long-term training was also annualized with a ULY of two years because of the changing nature of the treatment and care of HIV/AIDS patients and the attrition rate of trained personnel in HBC.

3.3.3 Rate of Exchange and Discount Rate

Unless provided in dollars by HBC program managers, program costs were calculated in local currency and converted to U.S. dollars using the December 2003 exchange rate of US$ 1.00 = 586 Rwandese francs (FRw). This was the average exchange rate provided by the program managers who converted U.S. dollars into Rwandese francs. No discount rate was applied to capital costs.

3.4 Limitations of the Data

Because of the newness of HBC in Rwanda there were several data limitations in this analysis. The use of a convenience sample biases the cost estimations generated. Most programs considered in this study were initiated during 2003. The early stage of implementation for each of the programs makes monthly costs and program information variable and unreliable.

The lack of robust financial systems in the sampled organizations led to qualitative estimates that limit the rigor of analysis. For example, consumption and replacement costs of items for OI treatment, kits, and personal hygiene products were not readily available and therefore were estimated. Training costs, a critical program component, were challenging to estimate as training consists of a diverse set of activities delivered with different strategies by organization. The rate of attrition of volunteers, especially the PLWHAs, and the growth of the program and staff led to increased training levels but little information on costs.

4. Findings

This section presents study findings in two parts: The first part is on key programmatic inputs, the second on overall costs estimates.

4.1 Key Program Inputs

This section provides findings on the inputs of the eight programs studied; the figures reflect January/February 2004 levels. As stated above, funding levels determine the inputs for each program.

4.1.1 Community-based Programs Reach More PLWHAs

The number of PLWHAs reached varies across the sample of eight programs. Some programs were able to launch with greater reach due to larger budget commitments. For example, CARE initiated its program in October 2003, with greater budget allocations than other programs. Based on available data, community-based programs tend to reach more individuals – most reach more than 2,000 patients per month – than do facility-based programs, the largest of which reaches 300 patients per month (Table 1).

Table 1: Key Inputs on Selected HBC Programs in Rwanda

	Facility-based			Community-based				
	CMS-Biryogo	**MSF-B**	**ESTHER**	**Africare**	**ANSP+**	**CARE**	**CARITAS**	**Red Cross**
Estimated # of PLWHAs	90	300	89	276	1,059	612	30*	2,078
Estimated number of visits to PLWHAs per month	N/a	2,400	712	2,208	8,472	4,896	240	16,624
# of staff	24	13	8	8	5	11	12	15
# of volunteers	90**	125	13	40	55	165	14	367

* CARITAS is just starting its program.
** CMS-Biryogo: PLWHAs in this facility-based program are also the beneficiaries of the program.

4.1.2 Number of Visits Are Related to Number of Patients Reached

The number of visits per month varies across the sample of eight programs. Given that each PLWHA is visited on average twice a week by the HBC services, programs reaching greater numbers of patients will also have a greater number of visits. For example, Red Cross reaches an estimated 2,078 patients per month, and therefore conducts more than 16,600 visits per month (Table 1).

Community-based programs tend to conduct more visits per month than facility-based programs – mainly because they are reaching more people.

4.1.3 Both Types of Programs Use Volunteers But Have a Different Mix of Volunteers and Medical Staff

The primary difference between facility-based and community-based programs is in type of staff that they use. Both utilize volunteers but in different proportions. In community-based programs, volunteers constitute the majority of staff that carry out the work with PLWHAs. Facility-based programs use mainly health professionals, and fewer volunteers; in these programs, volunteers assist medical personnel in providing services to PLWHAs.

4.2 Cost Estimates

This section discusses the costs of delivering HBC services through eight different programs in Rwanda by providing estimates of total monthly annual costs, costs per patient served per month and per HBC visit. Complete cost tables are presented in Annex A and Annex B; costing notes are presented in Annex C.

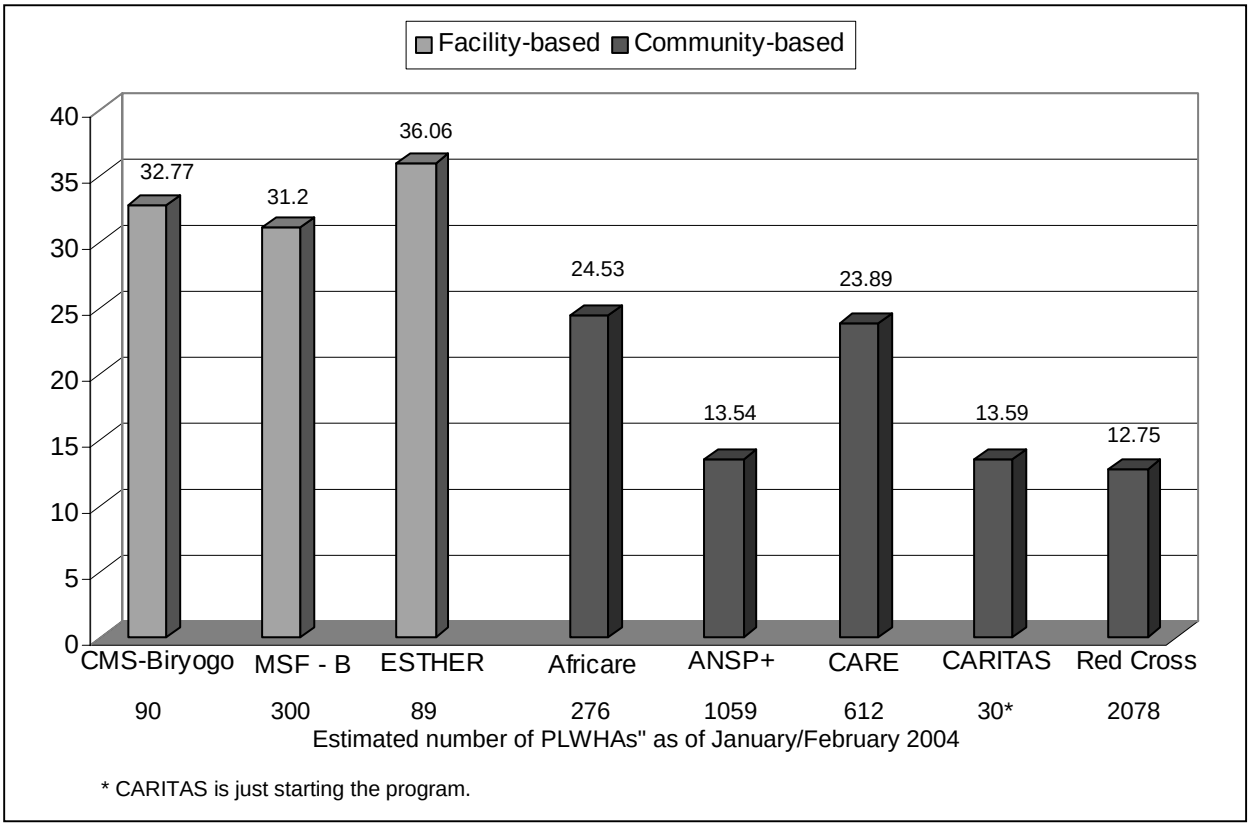
4.2.1 Total Monthly and Annual Program Costs Were Estimated

The study estimated the total monthly and annual program costs of offering HBC services. Monthly estimates range from $2,950 to $ 26,502. Annual estimates, obtained by multiplying the monthly estimates by 12 (months), range from $ 35,400 to $ 318,024. The data show that key cost factors are the number of PLWHAs served and the variable costs (with food rations as the major variable cost: see below): Programs with a lower number of PLWHAs – such as ESTHER, CARITAS, and CMS-Biryogo – have very low estimated monthly total costs whereas those with a large number of PLWHAs beneficiaries have higher costs, proportionate to their client load.

4.2.2 Per Patient Cost in Facility-based Programs Are Higher than in Community-based Programs

Figure 1 shows total per PLWHA costs of the eight programs in this study. The data reveal that the cost of providing HBC services differs across programs mainly due to program composition, staff, and reach. Estimated monthly per patient costs tend to be higher in facility-based programs than in community-based programs, with the former ranging from $31.20 to $36.01 and the latter from $ 12.75 to $24.53. The higher cost per patient in facility-based programs is attributed to higher drug costs for treatment of opportunistic infections, a service that facility-based programs provide more regularly, and to salaries for medical personnel. Facility-based programs also had higher capital costs. Finally, facility-based programs reach fewer patients per month, and this has an impact on the cost per patient reached estimates.

Figure 1: Estimated Monthly Costs per Client, in US$

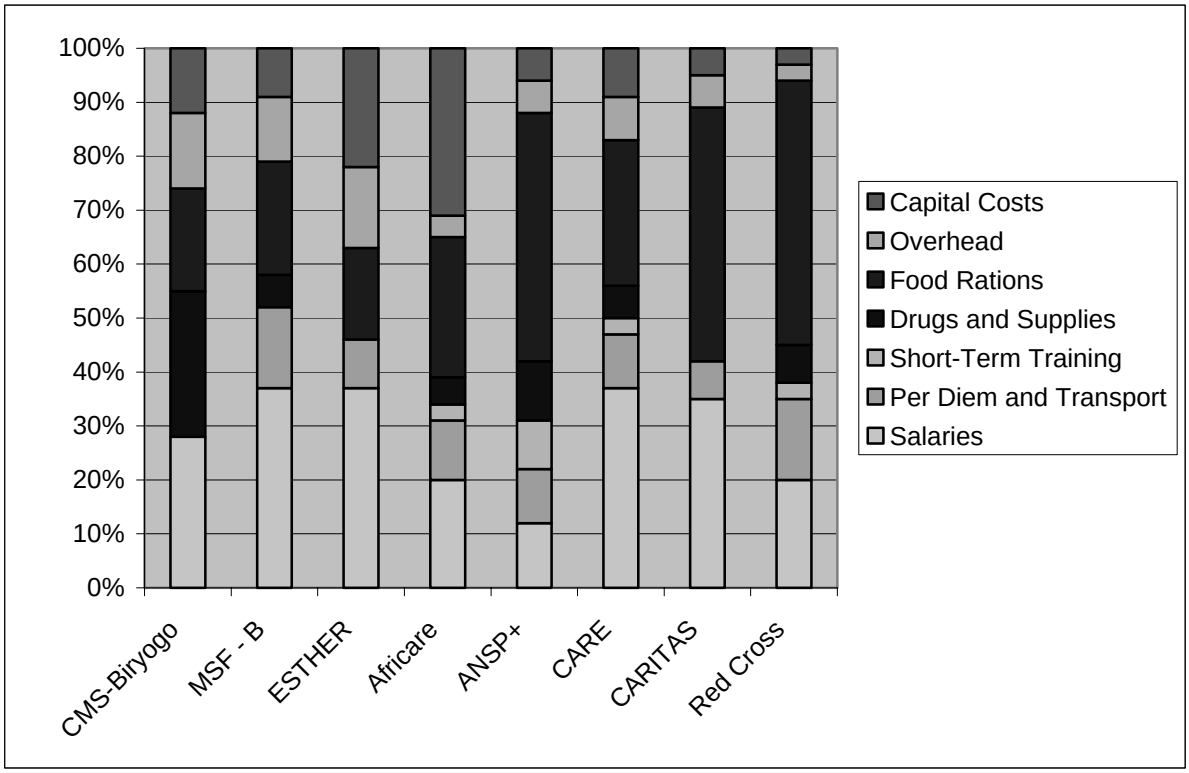


4.2.3 Food Costs are the Major Cost Driver for all HBC Programs

Figure 2 shows the percentage breakdown of each cost component, by HBC program. The data show variability among cost drivers.

Food commodities donated to clients represent the highest cost component in most programs, varying from 17 percent to 49 percent of total costs. Food costs are lower in facility-based programs, from 17 percent to 21 percent of total costs, than in community-based programs, where they represent 26 percent to 49 percent of total costs.

Figure 2: Cost Components of HBC Programs (percentage of estimated total costs)



4.2.4 Drug Costs are Not a Major Cost Driver for all HBC Programs

Drug costs are not a major cost component for all programs in this analysis.[7] The program with the highest proportion (13.1 percent) of drug costs to total costs is CMS-Biryogo, which includes a strong ARV treatment center and provides an accompanying OI treatment program delivered through HBC. Drug costs in most other programs average only around 2 percent, due mainly to the low cost of palliative drugs. In facility-based programs, drugs for OIs are low because these programs dispense partial OI treatments and refer patients to associated facilities for additional treatment. However, given that these programs are starting up, they were not likely dispensing the full dosage of drugs. In addition, data on drug consumption were very weak during the data collection process and will need to be looked at more closely in the future.

[7] The overall preponderance of food costs distorts total estimated costs and the percentage of other program components.

4.2.5 Staff and Per Diem/Transport Costs Are Higher in Facility-based Programs and Are Significant Cost Drivers

Figure 2 shows that staff costs and per diem/transport costs to reach patients are significant cost drivers across all HBC programs. Salaries vary between 12 and 37 percent of total costs while per diem/transport cost vary between 9 and 12 percent. In facility-based programs these costs are higher than in community-based programs, due to their use of (relatively) highly paid medical staff.

4.2.6 Program Costs Are New and Do Not Reflect Outputs

Based on the fact that many programs in this study are new and that programs are growing, becoming more medicalized, and with increasing PLWHAs loads, it is too early to determine if HBC is an expensive or inexpensive service delivery model compared to hospital care. Only additional studies can provide better information on the costs of HBC.

4.2.7 Food Rations Are a Substantial Component of Total Cost

The study includes the costs of food rations as part of total costs. Rations account for a sizeable proportion of total costs. The Rwandese HBC model received food rations not just for the PLWHAs but for the whole household (up to five people). In addition to the per PLWHA/household issue discussed above, it not known how the food rations are being supplemented with other food (either purchased and produced by PLWHAs and their families) to ensure that the PLWHAs are receiving the necessary nutrients to PLWHAs.

4.2.8 Training Costs Are Minimal But May Increase with Attrition of Volunteers

Training (short-term and long-term) amounts for HBC staff and volunteers were not significant either in absolute numbers (ranging from $ 192 to $ 1,501) or in relative proportion of total costs (varying between 6 and 10 percent). However, over the long term, training costs may start increasing as, according to HBC managers, the rate of attrition among volunteers and especially volunteer PLWHAs appears to be high. One HBC manager reported that, over the course of three months, the program had lost one-third of its HIV/AIDS clients, many of whom were HBC volunteers. In addition to training, the other impact that a high attrition rate may have is on the ability of delivering continuous care to PLWHAs. Attrition rates should be investigated further to better understand if they have an impact on training and on delivery of care to PLWHAs.

5. Discussion

5.1 Food Donation Costs and PLWHA Nutrition

HBC offers social services in addition to basic health services. The overwhelming proportion of costs attributed to donated food is indicative of the needs of individuals and households coping with HIV/AIDS. Many HBC programs are often extending larger welfare interventions as they grapple with the poverty of beneficiary populations they serve. Serving the larger food assistance needs of households was a basic program objective of both facility-based and community-based programs; therefore, each type of program had similar cost proportions dedicated to food.

While food costs were a significant portion of total monthly program costs, the benefits of food are shared benefits across the household. In addition, the nutritional benefit of donated food commodities requires further analysis as the food package offered may need supplementation to meet the needs of PLWHA. The current analysis did not estimate further supplementation of food commodities to supplement the donated food package offered.

5.2 Program Costs

The early stage of program implementation impacts the stability of cost information used in this analysis. Total program costs for HBC programs in this analysis are preliminary due to the early stage of program implementation. Start-up cost will be high for certain programs and not necessarily reflect cost-effective outputs. Given that many of these programs are still in start-up it is challenging to draw reliable conclusions about the overall cost of HBC as a mode of care. It is also inappropriate to make program comparisons, or draw conclusions about cost-efficiency or cost-effectiveness.

As programs mature, the issues that drive their growth will impact cost. As these programs mature, they also deliver a variety of interventions – ranging from medical and psycho-social interventions. In addition, as each program works to increase scale they are broadening their beneficiary and geographic coverage.

A closer estimate of total costs, cost by typology, and cost-efficiency and cost-effectiveness may be possible after at least one full year of program implementation, when programs are mature and have achieved some cost and program stability.

5.3 Unit Cost: Typology by Facility-based or Community-based

Currently, national plans and policies do not formalize the role and typologies of HBC as part of Rwanda's HIV/AIDS response. Cost alone may not be the only driver when considering program scale and future expansion. The diversity of interventions offered within HBC programs has an impact on program cost and, eventually, program effectiveness. The staff composition, mix of commodities, and program reach affects program cost and is also determined by the typology of the

program. Facility-based programs are able to deliver a package of medical interventions, including a different mix of drugs, due to the health personnel and referral network involved. Community-based programs were able to reach more individuals based on the network of volunteers involved and the lower level of costs resulting from the use of volunteers to deliver services.

While program typologies can assist in clarifying HBC programs, it is challenging to compare across volunteer- and facility-based programs as each type of program focuses on different services. In addition, when considering the potential to scale up various HIV/AIDS care interventions, different types of programs may be more efficient and appropriate in delivering specific interventions. The need for medical staff, community connections, and trust are examples of issues that may influence the type of program – facility-based and community-based – best suited for adding HIV care interventions ranging from ART to psycho-social support.

6. Conclusions

Given the increasing demand for HBC programs by clients and donors,[8] Rwanda is likely to establish additional HBC programs to expand program coverage, either by expanding the current set of HBC programs or establishing new programs. Cost estimates of HBC in Rwanda based on the analysis of eight out of the nearly 30 estimated HBC programs is challenging. Many HBC programs are just launching activities; therefore, systems were not in place, start-up activities were included, and program outputs required clarification. The analysis of the cost of the eight programs involved in this studied revealed that cost of HBC is influenced by several factors leading to the following conclusions:

1) *Basic social support and food assistance offered by most HBC programs account for a large share of program costs and also provide a critical intervention for families coping with HIV/AIDS*.

Health interventions, including drugs, are important interventions but are not the primary cost drivers of many HBC programs. All HBC programs in this analysis offered food assistance as a primary intervention to assist PLWHA and their families, highlighting the critical impact of HIV on poverty of households impacted. In addition to the need for food assistance as an essential intervention in HBC, a significant share of program costs are attributed to food assistance with approximately 60 percent of program costs resulting from donated food.

2) *Cost estimates are preliminary due to the early stage of program implementation and should not be used to guide future program direction without further analysis*.

Given that most of the programs involved in this analysis have only been implementing programs for six months or less, many of the cost parameters, and program systems to track outputs and costs were not yet established. Cost estimates were based on interviews and discussions in many cases rather than expenditure analysis; therefore, estimates may be biased. Future program direction would be better informed with stronger cost and output data which can be possible as programs mature.

3) *Facility-based programs may have slightly higher program costs and cost per output than community-based programs*.

Facility-based programs and community-based programs differed by the link to the health system and the emphasis of their program interventions. Program costs were higher for facility-based programs because of their use of health professional staff, and their ability to offer higher-level health interventions, which resulted in higher drug costs. When examining cost per output (cost per visit or cost per patient), facility-based programs had higher monthly costs per output due to their reach, ranging from $31.20 to $36.01 per patient reached. Community-based programs had greater reach due

[8] The Global Fund to Fight AIDS, Tuberculosis and Malaria has received many applications for HBC programs during the second and third rounds of applications.

to their use of community and volunteer networks and also lower monthly costs ranging from $12.75 to $24.53.

Per visit costs show the same pattern: per visit costs range from $3.90 to $4.51 for facility-based programs and $1.59 to $3.06 for community-based programs.

4) *Human resources remain an issue in implementing HBC programs*.

Given the current program reliance on volunteer assistance and use of PLWHA as counselors and volunteers, it is clear that current capacity and attrition are concerns for HBC managers. In order to maintain program quality, while also considering program expansion, it will be essential to explore various staffing patterns and training options to consistently provide services to PLWHA.

From a public health perspective, with the scale-up of ARVs currently being contemplated, HBC could be expanded to more sites or within the existing programs as it increases access of services and treatment to PLWHAs.

As programs mature, cost estimates will stabilize and program outputs, service packages, and human resource allocations, and profiles will become clear, allowing for a greater understanding of the potential for HBC in delivering quality HIV services. Addressing factors that influence cost and program data on HBC, guide HBC program quality, and leverage policy decisions can clarify the role of HBC as part of Rwanda's response to HIV.

7. Recommendations

The following are **recommendations** to inform decisions by the government of Rwanda and the donor community regarding the future of home-based care in HIV service delivery in Rwanda. Each contributes to the overall need to improve policy environment and information on HBC.

- **Engage stakeholders and develop HBC policy, clarifying its role in delivering HIV/AIDS prevention, treatment, and care and support services.** As program expansion is explored, the framework for establishing and delivering HBC would be extremely beneficial to inform scale-up of HIV services in Rwanda. Current stakeholders for HIV services, representing public, nonprofit, and commercial sectors, are not aware of the potential reach and cost of HBC programs, nor of the role of HBC in expanding HIV services, potentially including ARV therapy. While current guidelines for HBC provided by the Ministry of Health are critical for program implementation, they do not address the role of HBC in scaling-up HIV services and are not anchored in greater policy guidance.

- **Improve program data on HBC by institutionalizing a comprehensive inventory of HBC programs and services.** Given the diversity of providers, services, and delivery modes for HBC, there is a need to capture information on HBC based on a uniform set of parameters including type of provider, package of services, and reach.

- **Improve cost data on HBC by costing programs after one year of program implementation.** Cost analysis of HBC programs can be challenged by assessing costs early in start-up. It is important to have accurate cost information on HBC programs to inform current cost efficiency and potential for expansion and scale-up. Allowing for program implementation and cost information to stabilize is key to establish a reliable set of data for analysis. For example, by the end of 2004, the current base of HBC programs will have a full year of operations and expenditure data, and a comprehensive assessment of HBC costs should be repeated to help determine cost and cost efficiency.

Annex A. Summary Cost Tables for Facility-Based Programs: Estimated Monthly Costs

	CMS-Biryogo	MSF-B	ESTHER
Number of Beneficiaries	90	300	89
1 – RECURRENT COSTS			
SALARIES			
- Managerial staff	$287	$2,250	$469
- Medical staff	$183	$873	$392
- Support staff	$350	$350	$315
Sub Total	**$820**	**$3,473**	**$1,176**
SHORT TERM TRAINING			
- Short term training	$0	$165	$0
Sub Total	**$0**	**$165**	**$0**
PER DIEM & TRANSPORT			
- Per diem volunteers/counselors (counseling costs)	$0	$885	$0
- Transportation	$0	$562	$292
Sub Total	**$0**	**$1,447**	**$292**
DRUGS & SUPPLIES			
- OI, antibiotics and palliative drugs	$784	$428	$0
Sub Total	**$ 784**	**$ 428**	**$ 0**
HYGIENE PRODUCTS			
- Products	$0	$41	$0
Sub Total	**$0**	**$41**	**$0**
FOOD RATIONS			
- Food rations	$567	$1,890	$561
Sub Total	**$567**	**$1,890**	**$561**
OVERHEAD			
- Rent	$74	$191	$350
- Utilities	$346	$861	$116
Sub Total	**$419**	**$1,052**	**$466**
TOTAL RECURRENT COSTS	**$2,590**	**$8,496**	**$2,495**
2 – TOTAL CAPITAL COSTS			
- Vehicles	$0	$151	$167
- Equipment	$360	$297	$355
- Long Term Training	$0	$417	$192
TOTAL CAPITAL COSTS	**$360**	**$864**	**$714**
TOTAL COSTS	**$2,950**	**$9,360**	**$3,209**
Est. monthly cost per patient	**$32.77**	**$31.20**	**$36.06**
Est. monthly cost per visit per patient	**$4.09**	**$3.90**	**$4.51**

Annex B. Summary Cost Tables for Community-Based Programs: Estimated Monthly Costs

	Africare	ANSP+	CARE	CARITAS	Red Cross
Beneficiaries	278	1,059	612	300	2,078
1 – RECURRENT COSTS					
SALARIES					
- Managerial staff	$802	$1,190	$5,193	$672	$4,814
- Medical staff	$0	$0	$0	$0	$0
- Support staff	$560	$560	$294	$742	$350
Sub Total	**$1,362**	**$1,750**	**$5,487**	**$1,414**	**$5,164**
SHORT TERM TRAINING					
- Short term training	$227	$1,311	$245	$0	$915
Sub Total	**$227**	**$1,311**	**$245**	**$0**	**$915**
PER DIEM & TRANSPORT					
- Per diem volunteers/counselors (counseling costs)	$74	$488	$111	$119	$2,598
- Transportation	$686	$920	$1,404	$148	$1,296
Sub Total	**$760**	**$1,408**	**$1,515**	**$267**	**$3,894**
DRUGS & SUPPLIES					
- OI, antibiotics & palliative drugs	$229	$975	$471	$0	$1,311
Sub Total	**$229**	**$ 975**	**$471**	**$0**	**$1,311**
HYGIENE PRODUCTS					
- Products	$113	$488	$232	$0	$646
Sub Total	**$113**	**$488**	**$232**	**$0**	**$646**
FOOD RATIONS					
- Food rations	$1,751	$6,672	$3,856	$1950	$13,060
Sub Total	**$1,751**	**$6,672**	**$3,856**	**$1950**	**$13,060**
OVERHEAD					
- Rent	$109	$532	$680	$180	$546
- Utilities	$145	$378	$519	$72	$137
Sub Total	**$254**	**$910**	**$1,199**	**$252**	**$683**
TOTAL RECURRENT COSTS	**$4,693**	**$13,513**	**$13,500**	**$3,883**	**$25,673**
2 – TOTAL CAPITAL COSTS					
- Vehicles	$888	$243	$300	$84	$151
- Equipment	$1,065	$393	$364	$109	$297
- Long Term Training	$175	$190	$458	$0	$381
TOTAL CAPITAL COSTS	**$2,128**	**$826**	**$1,122**	**$193**	**$829**
TOTAL COSTS	**$6,821**	**$14,341**	**$14,622**	**$4,076**	**$26,502**
Est. monthly cost per patient	**$ 24.53**	**$13.54**	**$23.89**	**$13.59**	**$12.75**
Est. monthly cost per visit per patient	**$3.06**	**$1.69**	**$2.98**	**$1.70**	**$1.59**

Annex C. Additional Costing Notes

1 - RECURRENT COSTS	
SALARIES - Managerial staff - Medical staff - Support staff	Community-based programs do not use medical staff for their programs and refer serious medical cases to health centers/hospitals.
Sub Total	
SHORT TERM TRAINING - Short term training	CMS-Biryogo does not offer training for its HBC program. CARITAS has just started its HBC program and does not yet have costs for short-term training.
Sub Total	
PER DIEM & TRANSPORT - Per diem volunteers/counselors (counseling costs) - Transportation	CMS-Biryogo does not pay per diem nor transport reimbursement to the PLWHAs who are the HBC providers.
Sub Total	
DRUGS - OIs, antibiotics and palliative drugs	
Sub Total	
HYGIENE PRODUCTS - Products	CARITAS and CMS-Biryogo do not offer hygiene products as part of their HBC packages.
Sub Total	
FOOD RATION & NUTRITIONAL SERVICES - Food rations - Vitamins/nutritional supplements - Other	CARITAS receives and distributes food rations to only 90 of its HBC beneficiaries.
Sub Total	
RUNNING COSTS - Rent - Utilities	
Sub Total	
TOTAL RECURRENT COSTS	
2 - CAPITAL COSTS	
- Vehicles - Equipment - Long-term training - Volunteer kits	CMS-Biryogo does not use vehicles for its neighborhood HBC program, nor does it use volunteers or have a full training for its HBC program. CARITAS' new program does not yet have figure for long-term training and volunteer kits
TOTAL CAPITAL COSTS	
TOTAL COSTS	
Avg monthly cost per patient	CARITAS' costs are high compared to others as it provides services to only 30 patients.
Avg monthly cost per visit	This cost was not calculated for CMS-Biryogo, which does not have visiting HBC staff.

Annex D. Summary Description of Each Program

The following section provides an overview of each of the programs analyzed for this study. The information was collected in January/February 2004.

Médecins Sans Frontières-Belgique

Médecins Sans Frontières-Belgique HBC program is a facility-based program. The program is based out of two "agrées" facilities, meaning they receive government funding to provide health center-level services, one in urban Kigali and the other in the semi-rural area of Kigali. MSF-B Brussels-based staff originally trained the medical staff and volunteers of the program. In November 2003, the two MSF-B facilities became ARV-dispensing hospitals but it is only in December 2003 that the HBC program became operational in the semi-rural facility. The MSF-B program offers medical care through its visiting nurses and links with community volunteers to provide psycho-social support and food distribution. The medical officer describes the current OI treatment of the HBC package as minimal as seriously ill patients have to go the two hospitals for more advanced OI treatment. MSF-B provides HBC treatment to approximately 300 PLWHAs.

Centre Médico Social -Biryogo

Located in a very poor area of Kigali, Centre Médico Social Biryogo is a facility-based program that has been operating in Rwanda since 1988. CMS-Biryogo is also a "centre agree." CMS-Biryogo is one of FHI's ARV centers with dedicated ARV medical staff, ARV and OI drugs, training, and supervision.

CMS-Biryogo is somehow atypical of the rest of the HBC programs analyzed in this study. Its program is not an outreach program to provide services to PLHWAs. Very sick PLWHAs get their psycho-social support from less-sick PLWHA. Sick patients are taken to the hospital by less-sick PLWHAs. The HBC program was spontaneously started by PLWHA who decided to form a support network for more gravely ill PLWHA in the mid-1990s. No HBC training was provided to the PLWHA network nor are transportation stipends paid to PLWHA. CMS-Biryogo also does not provide HBC kits to the PLWHA network. CMS-Biryogo does have an hospice, built by CMS and managed by patients themselves. The hospice is used as a day-use outpatient ward for PLWHA and other sick patients; the CMS staff does not provide medical care in this hospice nor are patients allowed to spend the evening in the hospice: all care is provided at the medical center. In addition to food rations support received from the WFP, CMS-Biryogo has a nutrition center that provides meal support to PLWHA and other sick patients. CMS-Biryogo's unique feature is a "*service d'écoute*"[9] that operates 24/7 and is widely used by PLWHA for psycho-social support and referrals. It is difficult to estimate the number of people getting HBC services from CMS-Biryogo: the number of patients under the ARV program was 622, but not all of them are receiving HBC services. For the

[9] 'Listening service," staffed by social assistants.

purpose of the study, the cost of the home-based care is based on 90 PLWHA receiving HBC services[10].

Projet ESTHER

Projet ESTHER is a facility-based program. Initiated in March 2003 as an ARV delivery project at the *Centre Hospitalier de Kigali* (CHK), the *Ensemble Solidarité Thérapeutique Hospitalière en Réseau* (ESTHER) project is financed by the Luxembourg government as part of a twin-hospitals project between the CHK and the *Centre Hospitalier de Luxembourg*. The structured HBC program started in December 2003. A key focus of the HBC program is to ensure patient's compliance with ARV and OI treatment by having the HBC team visit PLWHA. Projet ESTHER's patients focus is on very poor PLWHA. Two nurses work with four social workers to provide visiting services to patients. When PLWHAs are very sick, they are brought back to the CHK to receive either inpatient or outpatient care. There are no HBC kits provided to the HBC team, and OI treatment and other drugs are provided during hospital visits or stays. Also, its PLWHA volunteers receive partial salaries and the hospital staff also receives salary supplements for participating in the program. As of February 2004, 89 PLWHAs were receiving HBC services.

Africare

Africare's HBC program is a community-based program. It can be said to be the oldest HBC program in Rwanda when Africare created the first-ever association of PLWHA in the country, in the Gikongoro province in 2001. However, funding for a structured HBC program with volunteers trained in basic counseling techniques and drugs dispensed by these volunteers to patients began only in July 2003. PLWHA receive OI treatment and other care but no antibiotics are provided. Volunteers facilitate the referrals to local health districts and hospitals. PLWHA also receive hygienic health kits to attend to their basic health needs. The HBC program is linked to an in-kind loan for poultry rearing to increase the income of PLWHA. Currently, the program provides bicycles to its volunteers to increase HBC visits to PLWHA. One of the key features of Africare's program is the work they do in engaging community support and increasing the awareness and knowledge in human rights for PLWAs. In early 2004, Africare was providing HBC services to 278 PLWHAs.

ANSP+

ANSP+ HBC program is a community-based program offering OI treatment, antibiotics, and pain/fever reducers. It is run by the national association of PLWHA which is currently implementing two grants for HBC programs, one with FHI funding for 10 district-level PLWHAs associations and the other with funds from the Global Fund to Fight AIDS, Tuberculosis and Malaria for 45 district-level PLWHA associations using the FHI training, mechanisms, and supervision system. Whereas the Association was started in September 2000, FHI initiated a pilot with ANSP+ in April 2002 that resulted in a grant for 10 other associations in July 2003: the Global Fund project started in October 2003. The program is a typical community-based program; beneficiaries number 1,059 PLWHA for the two programs combined.

[10] The selection of this number of PLWHA was based on the number of PLWHA receiving food rations from WFP.

CARE International

CARE is one of the world's largest private international humanitarian organizations, committed to helping families in poor communities improve their lives and achieve lasting victories over poverty. Founded in 1945 to provide relief to survivors of World War II, CARE quickly became a trusted vehicle for the compassion and generosity of millions. CARE's HBC program in Rwanda was initiated in early 2001 in the Gitarama area. It uses a combination of community-based groups and volunteers (some of them HIV positive) to provide HBC services to PLWHA and their families. CARE's kit – provided by ANSP+ – is an adaptation of the original kit developed by South Africa department of health with the collaboration of World Health Organization. It is intended for basic HBC (no drugs) and are provided by volunteers ("caregivers") identified in the community and trained by nurses from the University of Butare. Needy PLWHA also receive their own "PLWHA" kits which are intended for their basic daily hygiene: they contain toothpaste, soap, detergent, etc. PLWHAs receive their drugs (Diflucan ®, Bactrim®, etc.) from PLWHA associations. Current beneficiaries are 612 PLWHA and their families

CARITAS Internationalis

CARITAS Internationalis is a confederation of 162 Catholic relief, development and social service organisations working in more than 200 countries and territories. The CARITAS HBC program started in two hospitals in the Butare region in late 2003. According to one CARITAS AIDS project staff, "we provide HBC services very sporadically," (Kanani 2004) and the program distribution program has focused on psycho-social support and food rations distribution to PLWHA. In addition, CARITAS staff takes care of school fees for PLWHAs' children and of funeral expenses of PLWHA. PLWHA receive their drugs from the Hospital of Kaburatere and the teaching Hospital of Butare. CARITAS provides an ambulance to transport very sick PLWHA to the two hospitals: about 5 percent of their PLWHA have had to use this service (Kanani 2004). The cost and service data from this program therefore are not representative. Cost obtained from CARITAS are very preliminary: the authors feel they are incomplete. It is impossible to estimate training and other input costs for this program. For the purpose of the study, the cost of the program has been based on 30 PLWHA beneficiaries.

It is noteworthy to mention that CARITAS is interested in providing ARV through its HBC system.

Rwandese Red Cross

The Rwandese Red Cross was selected because of the size of its HBC beneficiaries (2,078 in January 2004) and the geographical spread of the activity (in six provinces). It uses its vast network of Red Cross volunteers from which a selected number receives an extensive primary care training program. In its his headquarters in Kigali, the organization has a full-time HBC supervisor. The Rwandese Red Cross offers psycho-social support, drugs (OI treatment, a limited list of antibiotics, pain relievers, and wound cleanings), food rations to PLWHA, as well as community education and advocacy to reduce stigma directed at PLWHA.

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